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**Appendix N:**

# *Overview:*

## *Classification of Living Things*

## APPENDIX N

# CLASSIFICATION OF LIVING THINGS: AN OVERVIEW

Understanding how living things are classified by scientists is helpful when learning about subjects such as stream biology. In order to help the reader of this manual series better understand the “scientific naming of organisms” that is used, we provide a very brief introduction (or review for some readers) to the terms of classification below. For readers who want more details about the history of the classification of living things or how the system works, we provide Internet links at the end of this appendix.

### Brief Overview of Biological Classification Terminology

In general, the order of taxonomic categories moves from most general, largest group (**Kingdom**), progressively down through smaller and smaller groups (**Phylum > Class > Order ...**), all the way down to a very specific type of organism (**Species**).

For illustration purposes, below is a list of the major taxonomic categories for a certain kind of stonefly called the Northeastern Sallfly (*Sweltsa naica*).

#### ORDER OF TAXONOMIC CATEGORIES (largest to smallest group)

- Kingdom..... Animalia
- Phylum ..... Arthropoda
- Class ..... Insecta
- Order ..... Plecoptera (stonefly order)
- Family ..... Chloroperlidae
- Genus ..... *Sweltsa*
- Species ..... *naica*

### Genus Naming Conventions

When scientists identify a creature as *Sweltsa* (as an example), they are referring to an organism within the genus *Sweltsa* without identifying which particular species they are talking about. Sometimes this is done because they didn’t have the time to identify the creature to the species level (a more time-consuming task). Other times it is done because multiple (or an unknown number of) species of the same genus have been found in a set of samples (or data), and it is more efficient to refer to just the genus as a whole rather than all the species which make up that particular genus found in a given sample.

Examples of other naming conventions could be *Swelsta sp.* or *Sweltsa spp.* When referring to what is either believed or known to exist in a sample of aquatic organisms, the abbreviation *sp.* following the genus indicates a single unidentified species, while *spp.* indicates multiple (or an unknown number of) species within the genus (*Sweltsa* in this example).

(Note: The term *genera* is plural for *genus*.)

### Internet Resources for More Information about the Classification of Living Things

<http://www.physicalgeography.net/fundamentals/9b.html>  
<http://www.msu.edu/~nixonjos/armadillo/taxonomy.html>  
<http://www.bioedonline.org/presentations/index.cfm#presentation2>  
<http://www.bio200.buffalo.edu/labs/nomenclature.html>